CLAIMS

1. A nozzle element for introducing gas into an industrial furnace for melting metals, having the following features:

   a) a nozzle body (3) made of a refractory material;
   b) a metal jacket (9) covering the refractory material on the cold side (7) of the nozzle body (3);
   c) heat-conducting elements (11, 13, 15, 17/17.2) which are in contact with the metal jacket (9) and extend into the refractory material;
   d) the metal jacket (9) is coolable;
   e) a nozzle pipe (outer nozzle pipe) which extends through the metal jacket (9) and the nozzle body (3) from the cold side (7) to the hot side (5) of the nozzle body (3).

2. The nozzle element according to Claim 1, wherein in the metal jacket (9) and the heat-conducting elements (11, 13, 15, 17, 17.1, 17.2) are all made of the same material.

3. The nozzle element according to Claim 1, wherein a metal jacket (9) and heat-conducting elements (11, 13, 15, 17, 17.1, 17.2) made of copper or stainless steel are provided.

4. The nozzle element according to Claim 1, wherein the heat-conducting elements (11, 13, 15, 17, 17.1, 17.2) are arranged essentially in a ring-like pattern around the outer nozzle pipe (19).

5. The nozzle element according to Claim 1, wherein heat-conducting elements (11, 13, 15, 17, 17.1, 17.2) are provided in the form of rods, webs or plates.

6. The nozzle element according to Claim 1, wherein the metal jacket (9) can be cooled by a cooling medium.

7. The nozzle element according to Claim 1, wherein a device is provided through which a fluid can be passed over the surface of the metal jacket (9) or through the metal jacket (9).

8. The nozzle element according to Claim 7, wherein a channel-shaped device (8) is provided for conducting the fluid.

9. The nozzle element according to Claim 1 with an inner nozzle pipe (21) displaceably arranged in the outer nozzle pipe (19) along its longitudinal axis (A).

10. The nozzle element according to Claim 1, wherein the inner nozzle pipe (21) is arranged inside the outer nozzle pipe (19) and at a distance from it.

11. The nozzle element according to Claim 10, wherein the inner nozzle pipe (21) and the outer nozzle pipe (19) are held at a distance from one another by spacers.

12. The nozzle element according to Claim 1, wherein the outer circumferential surface of the inner nozzle pipe (21) has a thread which engages in an inside thread arranged on the surface of the outer nozzle pipe (19) facing the inner nozzle pipe (21).

13. The industrial furnace, wherein a nozzle element according to Claim 1 is arranged in its outside wall.